
Discussing Medicare Physician Productivity and the Exploratory Analysis

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This article provides comments of three conference panel members on the analyses of the productivity adjustment used in the Medicare Economic Index (MEI), and on exploratory estimates of physician-specific productivity measures. Each has a different background and perspective.

INTRODUCTION

The Office of the Assistant Secretary for Planning and Evaluation (ASPE) and CMS' Office of the Actuary jointly sponsored a conference on physician productivity measures in October 2006. The MEI is one component of the methodology used in the annual update of the physician Medicare fee schedule (MFS). It is needed to measure year-to-year movements in input prices faced by physicians adjusted for multifactor productivity (MFP) changes. The MEI requires this adjustment to avoid double counting of gains in earnings resulting from growth in productivity implicitly included in economywide compensation and in each physician's own practice productivity.

ASPE and CMS seek to assure that ASPE physicians are paid accurately for the services they provide to Medicare beneficiaries. Consistent with this objective, ASPE and CMS jointly sponsored the preparation of three articles by Newhouse and Sinaiko

(2007-2008a,b) and Fisher (2007-2008) that explore the relative advantages and disadvantages of using alternative MFP index models, including an economywide and a physician-specific index, as an adjustment factor proxy for physician productivity change in the MEI. An additional objective is to better understand the data and conceptual issues that must be addressed in developing a time series measure of physician's MFP.

HARPER'S COMMENTS

Fisher's article (2007-2008) provides an excellent analysis, particularly the inputs, that would be needed in developing MFP measures for physician offices. The BLS has considered publishing measures of MFP for this industry, but it is felt that there is a critical limitation with available output measures. Fisher did what can be done, which is to adopt the measure of expenditures on physician office visits from the National Income and Product Accounts (NIPA), published by U.S. Bureau of Economic Analysis (BEA), and to deflate these measures using BLS Producer Price Indexes (PPI), thus converting the expenditures from nominal to real

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NOTES: Zachary Dyckman is an economist who has evaluated and designed provider payment systems for public and private health insurance plans. In the 1970s, he developed the MEI methodology, including adjustment for productivity change. Michael Harper, an associate commissioner at the U.S. Bureau of Labor Statistics (BLS), is responsible for the Bureau's productivity measurement programs. Peter McMenamin is an economist who previously directed physician payment research at the Health Care Financing Administration, and had focused on physician payment issues while with the American Medical Association.

terms. The limitation is that the output metric is effectively physician office visits, with no adjustment for quality change.

Fisher measures inputs using a model and price indexes quite similar to those used by BLS in measuring MFP for other industries. Inputs include capital, labor, and purchased intermediate inputs, which is appropriate for his gross output type measure, based on sales. He does not adjust hours for changing labor composition. This is not a serious problem—while BLS makes such adjustments for the private non-farm business sector, BLS does not make adjustments for individual industries. Furthermore, Fisher does make one very important compositional adjustment by tabulating physicians' hours separately from hours of other office employees, and by applying a separate wage-related weight to each. The estimates of non-physician employees' compensation seem reasonable. Using the employer cost for employee compensation and a residual approach seems acceptable in principle, but the ratio of fringe benefits to wages does not grow over time. That is surprising since benefits have grown significantly faster than wages, economywide.

A few concerns come to mind about how compensation shares were determined for the other inputs. A residual approach is used. First, the difference between physicians' office expenditures and non-physician employees' compensation was calculated. The concern is that these two items come from different sources, which would leave any errors of incompatibility in the residual. This residual is then allocated among capital, intermediate purchases, and physician pay.

The capital income is calculated as the sum of depreciation, business taxes, and equity returns. This may neglect interest costs and rental fees, which could be important. It is also unclear why it is

appropriate to include the estimate equity returns for proprietors from the statistics of income in that it may not match up with physical capital assets. Equity will reflect returns to intangible, as well as to fixed business assets, and it may also include retained earnings, which would be more a pool of funds set aside for future investments than returns to existing assets.

Noted are two empirical observations about the inputs. The information technology quantity should surely grow rapidly during the study period, but it does not. Also, the factor share of intermediate inputs grows substantially over the study period. The U.S. Census Bureau is cited as the data source. This may well be correct, but Fisher should comment on the circumstances that might explain this. Is labor being outsourced in this industry, as in many others?

With respect to the review of Fisher's work expressed by Newhouse and Sinaiko (2007-2008a,b) one agrees with many of their points. For example, they point out that no quality adjustments are made on official U.S. data on prices (BLS) or real output in the NIPA (BEA) and also reference the dramatic increases in life-spans and lower morbidity. They go on to explain that these benefits effectively accrue to households without being credited to business productivity.

From the standpoint of the BLS productivity program, this is not the desired treatment. It would be preferable if a quality adjustment were developed for medical outputs that accounted for these major life-enhancing changes in medical treatments. These gains are the result of technology improvements in the health care sector, and not the result of changes in the behavior of the household sector. (People are better educated about diet and exercise, but recent reports on the

increasing weight of Americans lead one to believe that most people are not using this knowledge effectively.) The correct treatment would be to adjust physicians' office output (and also that of the private business sector) for quality improvements. There is currently no method of quality adjustment that has been agreed on by professional economists. Until such an adjustment is introduced, productivity statistics for this sector will be of limited credibility because people expect productivity to reflect technological change above all else.

In conclusion, quality adjustment may be unnecessary for the issue of determining fair compensation for physicians. Quality improvements tend to dramatically increase MFP, and it would be hard to see the rationale for subtracting these quality adjustments from physician reimbursements. However, it is likely that policymakers would want to require physicians to adopt cost-saving technologies, such as the use of computers for many office functions. Fisher's measures may reasonably approximate such cost saving opportunities. Thus, it could be the case that his measurement procedures could play a role in a reimbursement formula, even though they might not be suitable for a productivity measurement program.

MCMENAMIN'S COMMENTS

There are three main points that need to be raised on the previously mentioned articles and the issue of the productivity adjustment in the MFS. First, each of them lead to deeper thoughts about productivity and the value of physician output. Second, the Fisher article (2007-2008) demonstrates the heroic efforts (and assumptions) that need to be made in bringing to fruition measures of MFP changes with respect to physicians' offices. Because of the magnitude of the effort and the uncertainty of the

results, it would be impossible to incorporate any periodic (much less annual) productivity change measure into a notice of exercise of a ministerial function as has been accomplished with the MEI over the years. Finally, the conference attendees were called on to consider the question, "Is the current productivity adjustment reasonable?" A broader question remains, "Does the current MFS (including productivity adjustments and all else) still serve Medicare's missions?"

There is one area in Fisher's data that may be problematic. Most surprising were the tax return data and how little the data has changed over time with regard to the distribution of returns between physician corporations and sole proprietors and that returns from sole proprietors and partnerships are increasing in number rather than decreasing. To the contrary, sole proprietors are becoming a thing of the past.

There is one area in Fisher's data that is more skeptical. Well-established results from several economists at CMS suggested that physicians billed one and only one charge for a procedure, and they received different amounts from different payers. In addition, it was very clear that different payers paid different amounts, so the assertion that all payers' relative rates were similar back in the 1970s is not true. Further, the reasonable charge reduction rate or ratio of allowed charges to bill for Medicare Part B was more on the order of 80 percent, and it has been declining ever since. That ratio may actually be at 55 percent now, but don't recall it being as high as 95 percent in the 1970s.

While there is a considerable amount of new work in the Fisher article, it remains an effort to coalesce the import of that information into a positive and coherent whole. As Newhouse reported and Fisher acknowledged, there's a lot of information needed to undergird the structure

for estimation that is just not there. For example, "... the physician office industry is marked by a dearth of available information from sources whose data are used to construct the MFP for other industries, so approximations from proxy variables were often required. Fringe benefits of labor are not available for physician hours. Historical depreciation amounts for physician offices are not reliably available from any source...estimates for growth in physician office capital may be substantially underestimated because they had to be estimates. A low-end allowance history exists for Medicare physician billings; none are apparently available for the general physician population."

Returning to a basic point: Announcing a technical adjustment to the MEI should be literally perfunctory—that is, capable of being performed by a functionary. Cited experience in this regard, where there were far less data than are available to CMS today; and from the American Medical Association, where they tried to collect data from those who they thought would be willing respondents. In assembling data on the economics of physician practices there are a lot of holes. Attaining the objective of perfunctory exercise of a ministerial function—replicating available data, incorporating those data in to a well-defined formula to compute a repeatable result, and then transmitting that result to the Office of General Counsel, is beyond a reasonable expectation.

The Newhouse-Sinaiko article (2007-2008b) includes a literature review with information about the history of physician health economics. The presentation and consideration of issues about productivity changes and policies to reflect or adapt to those changes is excellent. But the import of those discussions is the need to acknowledge that the value of the output of a relative value unit is changing. But the

change in the value of output is the important question, and it involves both quality changes and changes in patient well being.

Going back to a question that was posed at the beginning of the session, "Is the use of the non-farm MFP measure reasonable?" One could conclude that it's not entirely unreasonable. Maybe the answer to the question might be you could have zero productivity adjustment because it is at least plausible that the productivity improvements are enhancing patient benefits as is. (However, not to mention Medicare doesn't seem to adjust diagnosis related groups for productivity changes in the general economy.) Having worked often with physician data and analyses, it seems that even though, in theory, one wants a MFP measure, there are also inputs in the production of physician services that aren't going to change. At one point, physicians typically had \$100,000 - \$300,000 professional liability insurance limits. Now they have \$1-\$3 million limits. Same for space: a square foot is probably still a square foot. But doctors do more, know more. They do have better staffs. They deploy equipment that wasn't available before that is changing the way they treat patients. So somehow a good part of the physician production has changed, and there is productivity growth. But it's certainly not the entirety of what goes into physician offices or the physician environment, whether it's in an office or elsewhere.

As seems to often occur in health financing regulations, the method we have right now is the union of all the suggestions that have come since the beginning of Medicare. We start on one road, and that doesn't seem to work; some bells and whistles are added and we continue right along. Changing the current productivity adjustment for another would not be particularly different. But it's a political question,

not really an economic one. One would suggest, as a result of the conference and the articles, that it might be worthwhile to explore entirely different means of updating physician fees, to employ Occam's razor and say the current arrangement is entirely too complicated. Not to mention, the important question: Does the fee structure foster Medicare's mission to maintain beneficiary access to high-quality health services at reasonable costs in the context of the entire U.S. health care system? Medicare Payment Advisory Commission's recent estimates (2005), suggest that private market physician fees are 20 to 27 percent higher than Medicare's. If that portends that some Medicare beneficiaries do not get reasonable access to high-quality physician services to which they are entitled, would it really matter that the productivity adjustment was dead-on perfect? Given the recent history of last-minute workarounds to fix the MFS one doesn't know that there's a silver bullet that will do this, but there might be some other alloy that should be better than we presently have.

DYCKMAN'S COMMENTS

Private payers tend to focus primarily on two factors: access and cost. They want to make sure that a sufficient number of physicians participate in their provider networks and they want to be able to offer their customers competitive premium rates. Private payer fee update decisions reflect primarily the interplay and tension between these two factors when they set and update their fees.

With Medicare, it's different. There are public policy objectives related to physician payment in addition to assuring adequate access to care and reasonable cost, such as payment equity and fee increase limitations related to achievement of claim

cost targets. Once a regulatory framework has been introduced, including the MEI, then a controlling objective is to satisfy the regulatory requirements. It's part of the physician update mechanism, and we are not free to start from fresh to try to achieve specific policy objectives, but are required to work with the rules imposed by Congress. Yet, as Newhouse pointed out in his presentation at the conference, during each of the last several years, Congress has disregarded the fee update regulations and changed the rules, because the existing rules that required fee reductions did not make sense. Congress appeared to focus on the interplay between access and cost objectives in making Medicare fee update decisions.

The Newhouse-Sinaiko article (2007-2008a) provides a detailed description and history of the Medicare fee update methodology, and a comprehensive and insightful discussion of physician productivity, including a review of the physician productivity literature. The discussion of the importance and methodological issues relating to incorporating quality into measurement of physician productivity and the need to focus on episode of care is particularly instructive. In their second article, the authors (2007-2008b) also provide a good critique of the Fisher article (2007-2008), including both conceptual and empirical issues.

Fisher has done yeoman's work in developing an empirical model to measure physician productivity then find data sources for the necessary variables in the model. This work is more ambitious and more comprehensive than any other to date. However, he had to work with the available data, much of it not specific to physician services or not available for the entire study period. As a result, assumptions, extrapolations, and interpolations had to be made that cast some doubt

on the accuracy and reliability of the physician productivity findings.

One example of having to improvise to respond to data limitations is his use of net profit of incorporated physician offices as a proxy for physician return-on-equity for all physician services. Based on experience, some physicians in corporate practice arrangements will tend to pay themselves a salary that reflects their estimate of what they think their net revenue will be (after other expenses) at the end of the year. For these physicians, expected value of profits may be close to zero. In general, other physicians may pay themselves more conservatively, but not necessarily at competitive wage levels for comparable physician services. Physician corporate profit is a residual which likely is a very inaccurate measure of return-on-equity.

One of Fisher's (2007-2008) primary findings relates to the relationship of physician MFP to economywide (non-farm business) MFP. Over the 1983-2004 study period, he estimates that physician productivity increased at an average annual rate of 0.8 percent or about 70 percent of economywide MFP (1.2 percent). For the sub-period 1993 to 2000, economywide MFP increased at an annual rate of 0.9 percent and physician productivity declined 0.6 percent per year.

In one year, 1993, physician productivity is estimated to decline by 6 percent. This 6 percent productivity decline is caused, based on the Fisher data, by a 6-percent increase in factor inputs and a zero percent change in outputs for 1993. The estimated negative change in productivity for the period 1993-2000 and particularly for 1993 is suspect and may be caused by flaws in the data used to measure inputs and outputs for physician services.

There were two significant trends during the mid-1990s that could have resulted in

underestimates of physician outputs during that period. One, many health plans moved from reasonable and customary charge-based payment methodologies to resource-based relative value scale (RBRVS) fee schedules. When they did, evaluation and management services fees were increased somewhat and surgery, radiology, and other procedure-oriented fees tended to go down, sometimes considerably. For some plans, average fees declined as part of a 1-3 year RBRVS implementation process, while for others fees remained close to unchanged. Consumer price index physician fee data reflects physician charge trends rather than changes in payment rates, and may be biased upwards during the 1993-2000 period.¹

This fee index data was used by Fisher to deflate physician expenditures and to compute physician output. If this bias occurred, he would have understated changes in physician output during the mid 1990s.²

A second development that occurred during the mid-1990s was a shift from indemnity to managed care and also more aggressive use of managed care techniques by many managed care plans. There were greater efforts introduced during this period to counter what health plans would characterize as aggressive coding, and unbundling of services. Now, when physicians are providing the same services as before, but fewer services are being allowed, is that really a reduction in output? The combination of an upward bias in physician fees and a downward bias in physician service volume in data used by Fisher would have resulted in an understatement in his measure of physician

¹ Fisher used consumer price index physician charge data for the period prior to 1997 and PPI data thereafter.

² For the period prior to 1997, Fisher sought to adjust the consumer price index data to reflect physician payment rates (as does the PPI) rather than charges, but he may not have succeeded.

output changes and in physician MFP during the period 1993-2000.

As a historical note, when we looked at productivity adjustment within the MEI when the MEI was being developed in 1974, physician productivity was not considered. (Not because data were not available.) Rather, it was felt that it was appropriate to use a productivity adjustment that reflected all wage earners, society as a whole.

The reasoning was that if physicians were more productive than all U.S. workers, they should not be penalized under the MEI, but should be rewarded for their greater productivity. If they were less productive than all U.S. workers, their fees would increase at a somewhat lower rate.

Based on a review of the three articles we should continue to use an economy-wide measure of physician productivity as part of the Medicare physician update process, and not move to a measure of physician productivity. Firstly, given the available data, it's hard to believe that one could develop accurate and reliable measures of physician productivity, particularly

of single year changes in productivity for which relatively small errors in input or output measures can have sizable impact on the percentage change number. Secondly, even if accurate and reliable measures of physician productivity could be developed, I am not sure that it is more appropriate for use in adjusting Medicare physician fees than a measure of all U.S. worker productivity.

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